Please amend Claims 4, 9, 10, 18, 19, 21-31, 34-38, 41-43, 47, 48, 50, 52, 53, 55, 57-62 and 66, as follows. A marked-up copy of the amended claims, showing the changes made thereto, is attached. For the Examiner's convenience, all of the pending claims, currently under consideration, are provided below.

4. (Amended) A laser oscillating apparatus for generating a laser beam comprising:

a laser tube which is filled with a laser gas; and

a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots,

wherein said slots are spaced apart from a wall of said laser tube by a predetermined distance and an electromagnetic wave passage is formed in a position spacing said slots apart from said laser tube and connects said slots to said laser tube such that electromagnetic waves introduced from said plurality of slots can overlap with each other.

5. The apparatus according to claim 4, wherein the distance from said slots to said laser tube wall is an integral multiple of the half-wave length of an electromagnetic wave introduced from said waveguide.

6. The apparatus according to claim 4, wherein an electromagnetic wave introduced from said waveguide is a microwave.

7. The apparatus according to claim 4, wherein said passage is made from a conductor.

8. The apparatus according to claim 7, wherein in at least a portion where said passage is in contact with said laser tube, said passage forms an air gap having an opening with a predetermined width over the length of said laser tube.

9. (Amended) The apparatus according to claim 8, wherein said air gap is filled with at least one dielectric member.

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10. (Amended) The apparatus according to claim 9, further comprising a plurality of dielectric members having different dielectric constants.

11. The apparatus according to claim 8, wherein the width of said air gap is an integral multiple of the half-wave length of an electromagnetic wave introduced from said waveguide.

12. The apparatus according to claim 8, wherein only a distal end portion of said air gap is narrowed, and the opening has the shape of a slit over the length of said laser tube.

13. The apparatus according to claim 8, wherein said air gap has wide portions wider than the other portion in the vicinities of distal end portions.

14. The apparatus according to claim 13, wherein the width of said wide portion is substantially equal to one of the wavelength and the half-wave length of an electromagnetic wave introduced from said waveguide.

15. The apparatus according to claim 13, wherein the width of said wide portion changes along a longitudinal direction of said air gap on the basis of an intensity distribution of electromagnetic waves emitted from said slots.

16. The apparatus according to claim 4, wherein dielectric lenses each having a curved shape corresponding to said slot are formed in said passage in at least a portion above said plurality of slots.

17. The apparatus according to claim 4, wherein said waveguide is filled with a dielectric member.

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18. (Amended) The apparatus according to claim 4, wherein the laser gas is one of at least one inert gas selected from the group consisting of Kr, Ar, He and Ne, and a gas mixture of the inert gas and F_2 gas.

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19. (Amended) A laser oscillating apparatus for generating a laser beam comprising:

a laser tube which is filled with a laser gas; and

a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots,

wherein the width of longitudinal end portions of said slots are made larger than the width of a central portion thereof.

20. The apparatus according to claim 19, wherein said end portions have circular shapes with a diameter larger than the width of said central portion.

21. (Amended) The apparatus according to claim 19, wherein the laser gas is one of at least one inert gas selected from the group consisting of Kr, Ar, He and Ne, and a gas mixture of the inert gas and F_2 gas.

22. (Amended) A laser oscillating apparatus for generating a laser beam comprising:

a laser tube which is filled with a laser gas; and

a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots,

wherein said slots are formed apart from a central axis along a longitudinal direction of said waveguide and each of said slots is curved such that end portions are closer to the central axis than a central portion.

23. (Amended) The apparatus according to claim 22, wherein said electromagnetic waves are radiated from said waveguide in the direction of a long end face of said waveguide.

24. (Amended) The apparatus according to claim 22, wherein the laser gas is one of at least one inert gas selected from the group consisting of Kr, Ar, He and Ne, and a gas mixture of the inert gas and F_2 gas.

25. (Amended) A laser oscillating apparatus for generating a laser beam comprising:

a laser tube which is filled with a laser gas; and

a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots,

wherein an air-gap structure is formed in said waveguide wall in which said slots are formed.

26. (Amended) The apparatus according to claim 25, wherein said air-gap structure includes an air-gap portion formed near end portions of said slots within a range from said end portions to a distance of $\lambda g/4$ (λg is the waveguide wavelength of the electromagnetic wave).

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27. (Amended) The apparatus according to claim 25, wherein said air-gap structure includes an air-gap portion formed near end portions of said slots within a range from said end portions to a distance of $\lambda g/2$ (λg is the waveguide wavelength of the electromagnetic wave).

28. (Amended) The apparatus according to claim 25, wherein an air-gap portion of said air-gap structure in a central portion of one of said slots is made smaller than an air-gap portion near end portions of said slot.

29. (Amended) The apparatus according to claim 25, wherein in a direction perpendicular to a longitudinal direction of said slots, said air-gap structure is formed with a width equal to an integral multiple of $\lambda g/2$ (λg is the waveguide wavelength of the electromagnetic wave).

30. (Amended) The apparatus according to claim 25, wherein the laser gas is one of at least one inert gas selected from the group consisting of Kr, Ar, He and Ne, and a gas mixture of the inert gas and F_2 gas.

31. (Amended) A laser oscillating apparatus for generating a laser beam comprising:

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a laser tube which is filled with a laser gas; and

a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots,

wherein each of said plurality of slots comprises collecting means for guiding the electromagnetic wave to said slot.

32. The apparatus according to claim 31, wherein said collecting means comprises a slot having a tapered shape whose sectional shape narrows toward said laser tube.

33. The apparatus according to claim 31, wherein said collecting means comprises a dielectric lens formed with respect to said slot.

34. (Amended) The apparatus according to claim 31, wherein the laser gas is one of at least one inert gas selected from the group consisting of Kr, Ar, He and Ne, and a gas mixture of the inert gas and F_2 gas.

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35. (Amended) A laser oscillating apparatus for generating a laser beam comprising:

a laser tube which is filled with a laser gas; and

a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots,

wherein the width of end portions in a longitudinal direction of each of said slots is made smaller than the width of a central portion thereof.

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36. (Amended) The apparatus according to claim 35, wherein the laser gas is one of at least one inert gas selected from the group consisting of Kr, Ar, He and Ne, and a gas mixture of the inert gas and F_2 gas.

37. (Amended) A laser oscillating apparatus for generating a laser beam comprising:

a laser tube which is filled with a laser gas; and

a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots,

wherein said slots are formed in a portion where an emission characteristic of an electromagnetic wave depending on said slots is contrary to an intensity distribution of an electromagnetic wave propagating in said waveguide.

38. (Amended) The apparatus according to claim 37, wherein at least one of said slots is formed such that a minimum value of an intensity distribution of an electromagnetic wave propagating in said waveguide is in substantially the center of said slot.

39. The apparatus according to claim 38, wherein said slots are formed in a line at a pitch equal to one of the wavelength and the half-wave length of an electromagnetic wave in said waveguide.

40. The apparatus according to claim 37, wherein an electromagnet wave introduced from said waveguide is a microwave.

41. (Amended) The apparatus according to claim 37, wherein the laser gas is one of at least one inert gas selected from the group consisting of Kr, Ar, He and Ne, and a gas mixture of the inert gas and F_2 gas.

42. (Amended) A laser oscillating apparatus for generating a laser beam comprising:

a laser tube which is filled with a laser gas;

a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots; and

a shielding structure for shielding against the electromagnetic waves in said laser tube in order to prevent plasma excited above said slots from diffusing from a predetermined region.

43. (Amended) The apparatus according to claim 42, wherein said shielding structure is formed to prevent diffusion of the electromagnetic wave in a direction perpendicular to a longitudinal direction of said slots.

44. The apparatus according to claim 42, wherein said shielding structure comprises a metal wall spaced apart from said slots by a predetermined distance.

45. The apparatus according to claim 42, wherein said shielding structure is made from a mesh-like plate member.

46. The apparatus according to claim 42, wherein said shielding structure comprises a plurality of nozzle structures having predetermined openings.

47. (Amended) The apparatus according to claim 46, wherein said nozzle is a passage of the laser gas.

48. (Amended) The apparatus according to claim 42, wherein said shielding structure is formed by a magnetic field.

49. (Amended) The apparatus according to claim 42, wherein the laser gas is one of at least one inert gas selected from the group consisting of Kr, Ar, He and Ne, and a gas mixture of the inert gas and F_2 gas.

50. (Amended) A laser oscillating apparatus for generating a laser beam comprising:

a laser tube which is filled with a laser gas; and

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a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots,

wherein the width in a short-side direction of each of said slots is made smaller than the thickness of a sheath serving as a passage of the electromagnetic waves extending from an opening of each of said slots in said short-side direction.

51. The apparatus according to claim 50, wherein the width in said short-side direction is 10 to 100 μm.

52. (Amended) The apparatus according to claim 50, wherein the laser gas is one of at least one inert gas selected from the group consisting of Kr, Ar, He and Ne, and

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a gas mixture of the inert gas and F_2 gas.

53. (Amended) A laser oscillating apparatus for generating a laser beam comprising:

a laser tube which is filled with a laser gas; and

a waveguide which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots,

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wherein the width in the short-side direction of each of said slots is made smaller than the thickness of a sheath serving as a passage of the electromagnetic waves in the short-side direction, and a plurality of slots are arranged in the short-side direction.

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55. (Amended) The apparatus according to claim 53, wherein a shielding structure for suppressing diffusion of said plasma is formed laterally at an opening edge of one of said slots facing said laser tube.

57. (Amended) The apparatus according to claim 53, wherein the laser gas is one of at least one inert gas selected from the group consisting of Kr, Ar, He and Ne, and a gas mixture of the inert gas and F_2 gas.

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58. (Amended) A laser oscillating apparatus for generating a laser beam comprising:

a laser tube which is filled with a laser gas; and

a pair of waveguides, each of which has a plurality of slots formed in a waveguide wall and introduces electromagnetic waves into said laser tube through said slots,

wherein said pair of waveguides sandwich said laser tube such that surfaces of said waveguides having said slots oppose each other, identical electromagnetic waves are supplied to said pair of waveguides to excite a laser gas in two opposite directions in

said laser tube, and said pair of waveguides are constructed such that intensity distributions of electromagnetic waves introduced therefrom are shifted from each other.

59. (Amended) The apparatus according to claim 58, wherein the surfaces having said slots are short end faces of said waveguides, and said slots are formed in a line at equal intervals in a longitudinal direction of said slots.

60. (Amended) The apparatus according to claim 59, wherein said waveguides are arranged such that slots corresponding to each other between the opposing surfaces are shifted relative to each other by a predetermined distance.

61. (Amended) The apparatus according to claim 60, wherein said slots are formed at a pitch equal to half of a wavelength in said waveguides, and the predetermined distance is 1/4 of the wavelength.

62. (Amended) The apparatus according to claim 60, wherein said slots are formed at a pitch equal to one wavelength in said waveguides, and the predetermined distance is half of said wavelength.

63. The apparatus according to claim 60, further comprising phase adjusting means for shifting phases of electromagnetic waves supplied into said waveguides relative to each other.